US Army Medical Research and Materiel

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Securing Device for an Endotracheal Tube

This invention is an easy-to-use device for securing an endotracheal tube inside a patient's mouth. It includes a bite block, shield, and securing device that can be combined. The bite block may be mounted on the opposite surface of the shield from the clamp that holds the tube. It leaves space for the insertion of additional medical instruments, such as a pulse oximeter sensor or esophageal stethoscope, into the patient's mouth. It minimizes the likelihood of inadvertent extubation (retraction from the mouth) or mainstem (advancement into the patient) intubation. The clamp can be installed on the endotracheal tube either before or after intubation.

Endotracheal tubes are a type of catheter that can be inserted through the oral cavity of a patient and into the trachea to provide for the supply of fluids to the body, for the monitoring of internal conditions in the body, or to provide for removal of secretions from within the body. It is difficult to properly secure catheters to a patient's face to prevent inadvertent advancement of the catheter into the patient's trachea or extraction from the mouth. This invention provides a means of securing the endotracheal tube at a constant depth within the patient. Occlusion of the catheter by a patient's teeth can lead to hypoxia, hypercarabia, and negative pressure pulmonary edema syndrome. The invention prevents occlusion by including a bite block. The shield is large enough to prevent it from entering the patient's oral cavity.

The invention may be used in both human and veterinary medicine. The shield may be made of the same material as used in pacifiers. It can be used without the tapes or adhesions that typically hold endotracheal tubes in place.

Features and advantages:

- **Shield may be made of a see-through material to check for obstruction or contamination**
- **Prevents occlusion of the endotracheal tube lumen when the patient bites down**
- **Functions regardless of the presence of facial hair, dirt, blood, debris, or facial trauma**
- **May work on patients requiring laryngeal, or Combitube intubation**

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